6612-18

Serial No.: 10/669,436 Filed: September 25, 2003

## **LISTING OF THE CLAIMS**

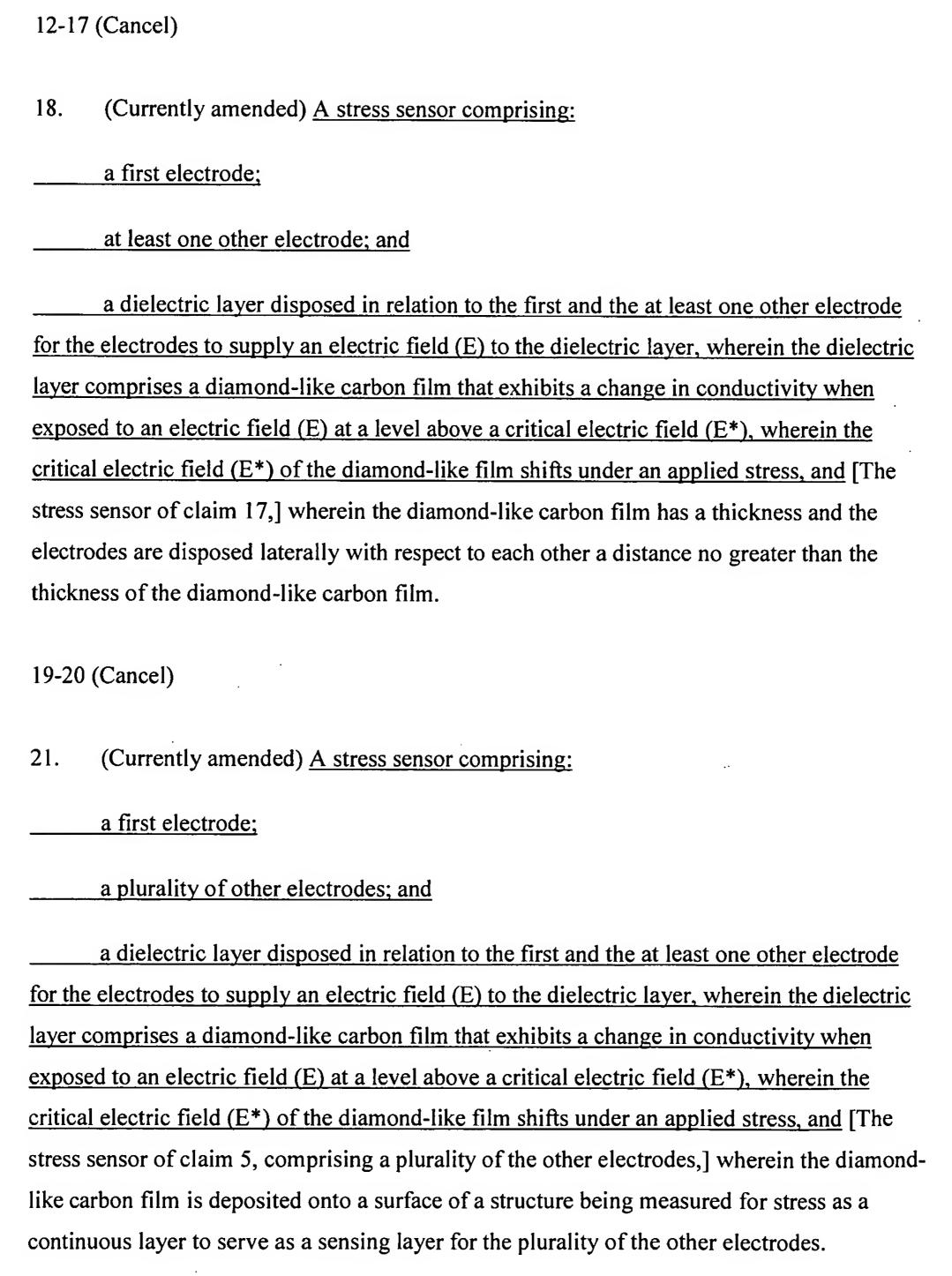
The present listing of the claims supersedes any previous listing of the claims.

1.	(Cancel)
2-4.	(Previously Canceled)
5-6.	(Cancel)
7.	(Currently amended) A stress sensor comprising:
	a first electrode;
	at least one other electrode; and
	a dielectric layer disposed in relation to the first and the at least one other electrode
for the	electrodes to supply an electric field (E) to the dielectric layer, wherein the dielectric
layer c	comprises a diamond-like carbon film that exhibits a change in conductivity when
expose	ed to an electric field (E) at a level above a critical electric field (E*), wherein the
critical electric field (E*) of the diamond-like film shifts under an applied stress, and [The	
stress sensor of claim 5,] wherein the critical electric field (E*) comprises about $2x10^5$ V/cm.	
8-10 (Cancel)	
11.	(Currently Amended) A stress sensor comprising:
<del></del>	a first electrode;
	at least one other electrode; and
	a dielectric layer disposed in relation to the first and the at least one other electrode
for the	electrodes to supply an electric field (E) to the dielectric layer, wherein the dielectric
layer c	omprises a diamond-like carbon film that exhibits a change in conductivity when
exposed to an electric field (E) at a level above a critical electric field (E*), wherein the	
critical electric field (E*) of the diamond-like film shifts under an applied stress, and [The	
stress sensor of claim 5,] wherein compressive forces on the diamond-like carbon film lowers	
the value of the critical electric field (E*) and wherein tensile forces on the diamond-like	
carbon film increases the value of the critical electric field (E*).	

6612-18

Serial No.: 10/669,436

Filed: September 25, 2003



22-23 (Cancel)

Serial No.: 10/669,436

Filed: September 25, 2003

24. (Currently amended) A method for determining whether a particular level of stress has been applied to a structure using [the stress sensor of claim 5,] a stress sensor comprising:

a first electrode;

at least one other electrode; and

a dielectric layer disposed in relation to the first and the at least one other electrode for the electrodes to supply an electric field (E) to the dielectric layer, wherein the dielectric layer comprises a diamond-like carbon film that exhibits a change in conductivity when exposed to an electric field (E) at a level above a critical electric field (E\*), wherein the critical electric field (E\*) of the diamond-like film shifts under an applied stress,

applying an electric field (E) with the first electrode and the at least one other electrode to the dielectric layer;

monitoring the conductivity of the dielectric layer; and

the method comprising:

determining whether the particular level of stress has been applied to the structure based on a change in the conductivity of the dielectric layer.

- 25. (Previously Presented) The method of claim 24, comprising determining whether the particular level of stress has been applied based on a shift in the critical electric field (E\*) of the dielectric layer resulting from the applied stress.
- 26. (Previously Presented) The method of claim 25, comprising applying an electric field (E) at a level less than the critical electric field (E\*) and determining whether a particular compressive stress has been applied to the structure based on a change in the conductivity of the dielectric layer which results from a shift in the critical electric field (E\*) of the dielectric layer as a result of the compressive stress.
- 27. (Previously Presented) The method of claim 26, comprising determining whether a particular compressive stress has been applied to the structure based on a change in conductivity of the dielectric layer which results from a shift in the critical electric field (E\*) of the dielectric layer to that less than the electric field (E) applied.

Serial No.: 10/669,436

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28. (Previously Presented) The method of claim 25, comprising applying an electric field (E) at a level greater than the critical electric field (E\*) and determining whether a particular tensile stress has been applied to the structure based on a change in the conductivity of the dielectric layer which results from a shift in the critical electric field (E\*) of the dielectric layer as a result of the tensile stress.

29. (Previously Presented) The method of claim 28, comprising determining whether a particular tensile stress has been applied to the structure based on a change in conductivity of the dielectric layer which results from a shift in the critical electric field (E\*) of the dielectric layer to that greater than the electric field (E) applied.